



Safe and fair food for informal markets: A food safety impact narrative

Did you know?

- In East Africa, livestock provide 10% of energy and 25% of protein requirements of poor people.
- In Africa and south Asia more than 80% of livestock products are produced by smallholder farmers and sold in informal markets.
- In Africa, informal sector accounts for 39% of national gross domestic product (GDP).
- In most countries, more than half of the top food-borne diseases are zoonoses.
- Improving food safety in informal markets can be cheap and effective: training in Nigeria cost USD 9/butcher, but resulted in USD 780/butcher per year savings from reduced cost of human illness.

In most developing countries, food-borne diseases are a major cause of sickness and death. Whilst many countries acknowledge food safety is a major problem, there is little up-to-date, comprehensive information on food safety issues at national level. Safer food can generate both health and wealth for the poor, but it requires radical and evidence-based change in the way food safety in informal markets is assessed, managed and communicated. Over the past decade, ILRI research has provided insight into the impacts of food-borne diseases, challenged conventional thinking on food safety and developed a successful approach to participatory risk analysis for understanding and managing food safety in a more dynamic future.

Meat, milk, eggs and fish are important sources of the micronutrients and high quality proteins essential for growth and health. In poor countries, livestock and fish feed billions. In developing countries, most of the meat, milk, eggs and fish produced are sold in traditional, domestic markets, lacking modern infrastructure and without effective food safety regulation and inspection. Concerns over food sold through these informal markets has been heightened by the landmark Global Burden of Disease studies which found that diarrhoea is among the most common causes of sickness and death in poor countries; as much as half is linked to animal pathogens or animal-source foods.

Food-borne illness and animal disease are of growing concern to consumers and policymakers alike. Consumers respond to scares by stopping or reducing purchases, with knock-on effects on smallholder production and informal market sellers. Policymakers often respond to health risks by promoting industrialization and reducing smallholder access to markets. These changes are often based on fear not facts. Safer food can generate both health and wealth for the poor, but attaining safe food production in developing countries requires a radical change in food safety assessment, management and communication.

Informal sales of raw milk in Yopougon Lièvre rouge site, Abidjan, Côte d'Ivoire (photo credit: ILRI/Sylvain Gnamien Traoré).



ILRI's approach

Without evidence of the risk to human health posed by informally marketed foods or the best way to manage risks while retaining benefits, the food eaten in poor countries is neither safe nor fair. For over a decade, ILRI and partners have been conducting research on food safety in informal markets to generate evidence and build capacity that maximizes market access for the poor, who are dependent on livestock and livestock products, while minimizing the food-borne disease burden for poor consumers.

Conventional food safety approaches tend to increase regulation and shift food out of risky informal channels into more formal channels: this is bad news for small-scale farmers. By employing new risk-based approaches, ILRI aims to find out if there really is a danger to human health and if so how big is it and what can be done about it. This approach is more supportive to poor farmers. A key part of the ILRI food safety research has therefore been to build capacity for food safety risk assessment: a methodology ILRI calls 'participatory risk assessment'.

Advantages of a participatory risk assessment approach:

- Shifts policymaking from knee-jerk reactions on seeing chaotic and unclean open markets to an evidence-based approach by using structured analysis which often shows that the risks of informally marketed food are not as high as they are perceived to be. For example, in urban East Africa where almost all consumers boil their milk before drinking it, the presence of germs in milk presents little risk. Moreover, when a sector gives a large amount of benefit to livelihoods and nutrition, a small amount of risk may be tolerable.
- Allows cheap and highly effective ways of making the bought and sold food safer for the poor by helping to identify the points along the 'farm to fork' pathway where control is most useful.

During 2008–11, core capacity in risk-based methods was built through training and practical application in 24 proof-of-concept studies in 8 countries in sub-Saharan Africa. In addition, over 50 food safety decision-makers from the 8 countries including key food safety experts and professionals from universities, food and drug authorities, public health departments, national agricultural research institutes and veterinary departments were trained in short-term courses and national workshops.

Evidence generated by ILRI research is challenging conventional thinking, leading to new attitudes towards food safety in developing countries. Studies have found that:

- **Informal markets are highly preferred and likely to persist**

Informal markets are the most important source of meat, milk and eggs for poor people in Africa and Asia and will continue to be so for at least the next decade. Informal markets often sell food at lower prices, but they have other desired attributes including food freshness, food taste, livestock products from local breeds, trust in the vendor, credit or other services.

- **Food safety matters to poor consumers**

Studies across 7 Asian and African countries show that most consumers (48–97%) care about food safety. For example, consumers (20–40%) switch to alternative meats in the wake of animal disease epidemics. Studies also indicate that consumers will pay a 5–15% premium for safety-assured products, and demand increases with economic development, rising income, urbanization, increased media coverage and education level.

- **Perception is a poor guide for risk managers**

Proper risk assessment is needed to understand the source of risk. For example, dairy cattle are the reservoir of cryptosporidiosis, a serious disease for infants and people with HIV. Yet in Nairobi, risk was associated with vegetable consumption and not milk. Similarly in Vietnam, although pork meat in live animal markets had high microbial loads, increased diarrhoea was associated with consumption of vegetables, not meat. Furthermore, studies in East Africa, Northeast India and Vietnam came to the surprising conclusion that food sold in formal markets, though commonly perceived to be safer, may have lower

compliance with standards than informally marketed food. This emphasizes that food safety policy should be based on evidence and not perception, and failure to do this may be prejudicial to the poor who dominate and rely upon informal value chains.

- **Draconian food safety policy makes things worse**

Analyses of food safety in six countries revealed that stakeholders often blame insufficient legislation or lack of strict implementation for poor food safety. Paradoxically, legislation can increase the level of risk. Work in Kampala showed the importance of poor dairy farmers as risk managers and the paradoxical effects of conventional policy. Thirty practices were described which were used spontaneously by farmers that reduced risk. Moreover, farmers who had experienced harassment by authorities or who believed urban farming to be illegal used significantly fewer risk managing practices.

- **Values and cultures are more important drivers of food safety than pathogens**

A study on the linkages between gender, collective action and food safety among retail butchers in Ibadan, Nigeria highlighted the importance of gender as a food safety determinant. The study found butchers' associations with more women had better food safety practices, better quality of meat, and less gastro-intestinal illness amongst consumers. A further study in West Africa found that Fulani believed that because milk was in its nature pure, it could not be a source of disease. They boiled milk they sold to customers but not the milk they drank themselves.

- **Food safety is a fixable problem**

Studies on milk in Kenya and India, and meat in Nigeria, have shown that simple interventions can lead to substantial improvements in food safety. These interventions involved training, simple technologies (such as use of wide-necked vessels for milk which are easier to clean), social approval, tests for food safety which can be applied by traders and consumers (e.g. lactometers to check for added water) and certification of trained vendors. In Nigeria, butchers were trained in hygienic meat handling and given hats, aprons and stickers to signal their training. After the training, 20% more meat samples met standards. The intervention cost USD 9/butcher, but resulted in savings of USD 780/butcher per year from reduced cost of human illness.

Next steps

Over the last decade, ILRI's research has confirmed the hypothesis that food safety is an important and growing constraint to smallholder value chains because of its multiple burdens on human health, livestock production and product marketing. Safer food can generate both health and wealth for the poor, but requires radical and evidence-based change in how food safety in informal markets is assessed, managed and communicated.

The CGIAR Research Program (CRP) on Agriculture for Enhanced Nutrition and Health is an opportunity to bring new resources to tackle this problem. Work will be closely aligned with other CRP value chains.

Grid with fish at the end of smoking in the village of Fanti in Port-Bouët, Côte d'Ivoire (photo credit: ILRI/Yolande Aké-Assi).



Locally made beef stew sold in Bagnon market at Yopougon, Abidjan, Côte d'Ivoire (photo credit: ILRI/Valentin Bognan Koné).



References

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This is one of a series of briefs documenting the impacts of ILRI's research.

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